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FORM PTO-1390 REV. 5-93		US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEYS DOCKET NUMBER <b>P00,0638</b>
<b>TRANSMITTAL LETTER TO THE UNITED STATES          DESIGNATED/ELECTED OFFICE (DO/EO/US)          CONCERNING A FILING UNDER 35 U.S.C. 371</b>			U.S. APPLICATION NO. (if known, see 37 CFR 1.5) <b>09/555868</b>
INTERNATIONAL APPLICATION NO. <b>PCT/DE98/03456</b>	INTERNATIONAL FILING DATE <b>23 NOVEMBER 1998</b>	PRIORITY DATE CLAIMED <b>11 DECEMBER 1997 and          20 FEBRUARY 1998</b>	
TITLE OF INVENTION <b>APPARATUS AND METHOD FOR SENDING AND RECEIVING DATA IN AN SDH OR PDH TRANSMISSION SYSTEM</b>			
APPLICANT(S) FOR DO/EO/US <b>JOSEF SINGER</b>			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay. 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of International Application as filed (35 U.S.C. 371(c)(2)) -drawings attached. a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US) 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2) - drawings attached. 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3)) a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). <b>Items 11. to 16. below concern other document(s) or information included:</b> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98; (PTO 1449, Prior Art, Search Report). 12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included. <b>(SEE ATTACHED ENVELOPE)</b> 13. <input checked="" type="checkbox"/> Amendment "A" prior to action. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: a. <input checked="" type="checkbox"/> Request for Approval of Drawing Changes - <b>5 Sheets of Drawings, Figures 1-5.</b> b. <input checked="" type="checkbox"/> <b>Abstract Replacement Page 12 attached to Amendment "A".</b> c. <input checked="" type="checkbox"/> EXPRESS MAIL # EL 544622784US dated June 7, 2000.			

U.S. APPLICATION NO (if known, see 37 C.F.R. 1.51)

INTERNATIONAL APPLICATION NO

ATTORNEY'S DOCKET NUMBER

PCT/DE98/03456

P00,0638

17. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5):**

Search Report has been prepared by the EPO or JPO ..... \$840.00

International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) .. \$670.00

No international preliminary examination fee paid to USPTO (37 C.F.R. 1.482) but  
international search fee paid to USPTO (37 C.F.R. 1.445(a)(2) ..... \$760.00Neither international preliminary examination fee (37 C.F.R. 1.482) nor international  
search fee (37 C.F.R. 1.445(a)(2) paid to USPTO ..... \$970.00International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) and all  
claims satisfied provisions of PCT Article 33(2)-(4) ..... \$96.00**ENTER APPROPRIATE BASIC FEE AMOUNT =** \$ 840.00Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months  
from the earliest claimed priority date (37 C.F.R. 1.492(e)).

Claims

Number Filed

Number  
Extra

Rate

Total Claims

18 - 20 =

0

X \$ 18.00

Independent Claims

04 - 3 =

1

X \$ 78.00

Multiple Dependent Claims

\$260.00 +

**TOTAL OF ABOVE CALCULATIONS =** \$ 918.00Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must  
also be filed. (Note 37 C.F.R. 1.9, 1.27, 1.28)**SUBTOTAL =** \$ 918.00Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months  
from the earliest claimed priority date (37 CFR 1.492(f)).**TOTAL NATIONAL FEE =** \$ 918.00Fee for recording the enclosed assignment (37 C.F.R. 1.21(h). The assignment must be  
accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). \$40.00 per property**TOTAL FEES ENCLOSED =** \$ 918.00Amount to be  
refunded

charged

a. ☒ A check in the amount of \$ 918.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees. A  
duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 08-2290. A duplicate copy of this sheet is enclosed.NOTE: Where an appropriate time limit under 37 C.F.R. 1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. 1.137(a) or (b)) must be  
filed and granted to restore the application to pending status.

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09/555868

533 Rec'd PCT/PTO 07 JUN 2000

**CERTIFICATE OF MAILING BY EXPRESS MAIL**

**Express Mail Mailing Label Number EL 544622784US**

**Date of Deposit: June 7, 2000**

I hereby certify that this correspondence is being deposited with the United States Postal "Express Mail Post Office to Addressee" service under 37 CFR 1.10(c) on the date indicated above and is addressed to:

**BOX PCT  
Assistant Commissioner for Patents  
Washington DC 20231**

Case Number: **P00,0638**  
Applicant(s): **Josef Singer**

**International Application No. PCT/DE98/03456**  
**International Filing Date 23 November 1998**  
**Priority Date Claimed 11 December 1997 and**  
**20 February 1998**

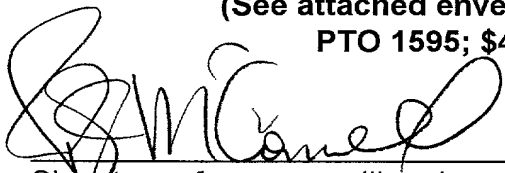
**Title: Apparatus and Method for Sending and Receiving Data in an SDH or PDH Transmission System**

**Enclosed are the following documents:**

International application as filed, drawings attached;  
English translation, drawings attached;  
Annexes;  
Executed Declaration;  
PTO 1390 in duplicate;  
Amendment "A" prior to action;  
Information Disclosure Statement; PTO 1449, Search Report, References;  
Request for approval of drawing changes, 5 sheets of drawings, Figures 1-5;

Fee: \$ 918.00  
Postcard

**(See attached envelope for Executed Assignment;  
PTO 1595; \$40.00 filing fee; Postcard)**



Signature of person mailing documents and fees

-1-

BOX PCT  
IN THE UNITED STATES ELECTED OFFICE  
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

**AMENDMENT "A" PRIOR TO ACTION**

APPLICANT: Josef Singer  
ATTORNEY DOCKET NO.: P00,0638  
INTERNATIONAL APPLICATION NO: PCT/DE98/03456  
INTERNATIONAL FILING DATE: 23 November 1998

10 INVENTION: "APPARATUS AND METHOD FOR SENDING AND  
RECEIVING DATA IN AN SDH OR PDH  
TRANSMISSION SYSTEM"

Assistant Commissioner for Patents  
Washington, D.C. 20231

15 Sir:

Applicants amend the above-identified PCT application as follows, and  
request entry of the Amendment prior to examination in the United States National  
Examination Phase.

**IN THE SPECIFICATION:**

20 On page 1:

delete lines 1 and 2 and insert the following new title:

--APPARATUS AND METHOD FOR SENDING AND  
RECEIVING DATA IN AN SDH OR PDH TRANSMISSION SYSTEM--

after line 2 as a separate line before line 3 insert the following heading:

25 --BACKGROUND OF THE INVENTION--;

line 4, delete "/or"; and delete "," after "or" (second occurrence);

line 5, delete "respectively,;

line 7, delete ", respectively,";

line 10, delete ", for example,"; after "channel" insert --for example--;

30 replace "An" with --Thus, a higher--; and delete "that";

line 11, delete "is higher by the"; before "compression" insert -- necessitates a higher--; and delete "thus derives";

line 12, delete "the" (first occurrence); delete "of the"; and delete ", for example,";

5 line 13, after "radiotelephony" insert --, for example"; and replace "therefor" with --for those methods--;

line 16, after "multiplexed" delete ","; insert --, (--; after "i.e." insert --,--; and after "strategy" insert --)--.

On substitute page 2:

10 line 2, after "3" delete "," (first occurrence); before "i.e." insert -- (after "i.e." insert --,--; after "another" insert --)--; and delete "thus";

line 4, delete ", respectively,";

line 8, after "10" insert --,--; and after "11" insert --,--;

line 10, after "12" insert --,--;

15 line 11, delete "thereby";

line 12, delete "following"; and after "packet" insert --following--;

line 16, before "i." insert --(--; after "e." insert --,--; after "frames" insert --)--; and delete ", respectively,";

20 line 18, delete "thereby ensue" and replace with --be accomplished by-- ; delete "via" (both occurrences); and delete "," after "SDH or";

line 19, delete "respectively,";

line 20, delete "," after "corresponding";

line 23, delete ", respectively,"; after "system" replace "," with --.--; replace "as" with --As--; after "result" insert --,--; and delete "whereof";

25 line 24, delete ", respectively, possible" and insert --potential-- in place thereof;

line 25, before "'SUPPORT" insert --entitled--;

line 29, delete "for example" and insert --e.g.,--; and delete "of" (second occurrence); and

line 30, delete “thereby likewise” and insert --similarly--; after “are” insert --,--; and after “turn” insert --,--.

On substitute page 2a:

line 1, insert the following heading:

5                   --SUMMARY OF THE INVENTION--;

delete lines 2 through 7 and insert the following paragraph:

--It is an object of the present invention to offer an apparatus for sending data in an SDH or PDH transmission system that enable an increased transmission bandwidth in the transmission of data, such as compressed voice data.--

10           On page 3:

delete lines 1 through 8 and insert the following paragraphs:

--This and other objects are achieved by an apparatus and a method for sending data in an SDH or PDH transmission system. In particular, an apparatus for sending data in at least one of an SDH and a PDH transmission system includes a data arrangement unit configured for receiving and arranging data incoming in a plurality of data channels into a plurality of mini-cells each having a flexible length. A multiplexer is configured to generate a single data stream from the plurality of mini-cells, wherein the received plurality of mini-cells are joined to one another within the single data stream. Additionally, a direct transmission frame generator is included to generate individual transmission frames directly from the data stream and send the generated individual transmission frames via one of an SDH and a PDH transmission system. The individual transmission frames contain a number of mini-cells and correspond to the frame structure of either the SDH or PDH transmission system.

20           According to another aspect of the present invention, an apparatus for receiving data in either an SDH or a PDH transmission system includes a direct data stream generator configured to receive and directly generate a single data stream of a plurality of mini-cells from incoming transmission frames corresponding to the frame structure of either the SDH or PDH transmission system. A demultiplexer is included

and configured to distribute data contained in the plurality of mini-cells in a single data stream onto respective channels. Finally, a data arrangement unit is included to restore data of individual data channels from a plurality of mini-cells.

According to a further aspect of the present invention, a method for sending  
5 data in either an SDH or a PDH transmission system includes the steps of first receiving and arranging data incoming in a plurality of data channels into a plurality of mini-cells having a flexible length. A single data stream is then generated from the plurality of mini-cells, wherein the received plurality of mini-cells are arranged following one another in the data stream. Next, individual transmission frames are  
10 directly generated from the data stream and transmitted via one of the SDH or PDH transmission system. The individual transmission frames contain a number of mini-cells and correspond to the frame structure of the SDH or PDH transmission system.

According to yet another aspect of the present invention, a method for receiving data in either an SDH or a PDH transmission system is provided wherein  
15 incoming transmission frames are received, the frames corresponding to a frame structure of one of the SDH and PDH transmission system. A single data stream is directly generated from the incoming transmission frames and data contained in a plurality of mini cells contained within the data stream are distributed. Finally data of individual data channels is restored from the plurality of mini-cells.--;

20 line 9, delete “, respectively,”;  
line 12, delete “, respectively,”;  
line 13, delete “or, respectively, as an alternative to”;  
line 15, delete “, respectively given the” and insert --and— in place thereof;

25 line 16, delete “, respectively,”;  
line 17, after “are” insert --,--; and after “turn” insert --,--;  
lines 19, delete “, respectively,” (first occurrence); delete “or,” (second occurrence); and delete “respectively, as an”;

30 line 20, delete “alternative to the generation of” and insert --generating-- in place thereof;

line 21, delete “The” and insert --Hence, the-- in place thereof; and delete “thereby”;

line 22, delete “, respectively,”;

line 27, delete “, for example”; after “multiplexing” insert --, for  
5 example--; and

delete lines 28 and 29.

On page 4:

line 1, delete “or, respectively, the” and insert --and--.

line 5, delete “thereby”; and delete “or,”;

10 line 6, delete “respectively,”;

line 8, delete “, respectively, the”; and insert --and-- in place thereof;

line 14, delete “respectively,”

line 17 insert “a” before “parallel”;

line 18, delete “thereby”;

15 line 19, delete “, respectively, of the”; and delete “,” after “or” (second occurrence);

line 20, delete “respectively,”; delete “and/or” and insert --or-- in place thereof; delete “The” and insert --Hence, the--;

line 21, delete “thus” (both occurrences); and delete “of”;

20 line 24, delete “or, respectively, the” and insert --and-- in place thereof;

line 27, delete “, respectively,”; and

line 28, delete “thereby”.

On page 5:

25 line 1, delete “So that the” and insert --In order to allow the-- in place thereof; and delete “for”;

line 2, delete “receiving data can also” and insert --to-- in place thereof; and



line 3, delete "tothe" and insert --to the--.

line 4, delete "or, respectively,";

line 47 delete "ensue" and insert --be carried out in a-- in place thereof;  
after "parallel" insert --fashion to-- in place thereof; delete "alternatively to" and insert  
5 --alternating with-- in place thereof;

line 9, delete "or, respectively,";

after line 11, before line 12 insert the following paragraph and heading:

--Additional advantages and novel features of the invention will be set forth,  
in part, in the description that follows and, in part, will become apparent to those  
10 skilled in the art upon examination of the following or may be learned by practice of  
the invention. The advantages of the invention may be realized and attained by means  
of the instrumentalities and combinations particularly pointed out in the appended  
claims.

#### BRIEF DESCRIPTION OF THE DRAWINGS--;

15 delete lines 12, 13 and 14 and insert the following paragraph:

--The present invention is explained with reference to the attached drawings,  
where elements having the same numeral reference denote like elements throughout  
and wherein:

line 15, after "1" insert --illustrates--; and delete "or,";

20 line 16, delete "respectively,";

line 17, after "2" insert --is--; delete "inventively";

line 18, after "data" insert --of an embodiment of the present  
invention--;

line 19, after "3" insert --shows--; delete "or,";

25 line 20, delete "respectively,"; before "the" insert --an embodiment  
of--;

line 21, after "4" insert --illustrates--; delete "or";

line 22, delete "respectively,"

line 24, after "5" insert --is--;

after line 25 and before line 26 insert as a separate new heading:

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--;

line 27, delete “, respectively,”;

line 28, before “the” insert --an embodiment of--; and

5 line 29, after “2” insert --or mini-cell arrangement unit--.

On page 6:

line 5, delete “whereby” and insert --wherein--;

line 9, after “packets” insert --(i.e., ATM Data Packet Generator)--;  
delete “, respectively,”;

10 line 10, after “or” delete “,”;

line 11, delete “respectively,”; after “being” insert --,--; after “turn”  
insert --,--; and after “5” insert --or PDH/SDH Transmission Frame Generator--;

line 12, delete “thereof” (both occurrences);

line 13, delete “, respectively,”;

15 line 14, after “generated” insert --directly--; delete “in a direct way”;  
and after “6” insert --or Direct PDH/SDH Transmission Frame Generator--;

line 16, after “field” insert --STF--;

line 18, after “18,” insert --(--; after “e.” insert --,--; and after “19”  
insert --)--;

20 line 20, delete “thereby”;

line 21, after “data” (second occurrence) insert --24--;

line 24, delete “exemplary” and insert --alternate--;

line 25, delete “, respectively,”; and

line 29, delete “, respectively,”.

25 On page 7:

line 1, after “25” insert --(i.e., ATM Data Packet Generator)--;

line 2, delete “, respectively, the”; and

line 3, delete “, respectively,” and after “26” insert --(i.e., Mini-Cell

Data Stream Generator)--;

line 6, after "29" insert --(i.e., Voice Data Arrangement Unit)--;

line 9, after "27" insert --(i.e., Direct Data Stream Generator)--;

line 10, delete ", respectively,";

5 line 11, delete "thus,";

line 18, delete ", respectively,"; and

after line 20, insert the following new paragraph:

--While this invention has been described in connection with what are presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.--

**IN THE CLAIMS:**

**On substitute page 8, line 1, replace "Patent Claims" with**  
15 **--What is claimed is:--.**

**Delete claims 1 and 10 without prejudice or disclaimer.**

**Amend the following claims 2-9 and 11-18:**

2. (Amended) An apparatus [Apparatus for sending data in an SDH or, respectively, PDH transmission system] according to claim [1] 19, [characterized by  
20 a means (4)] further comprising:

an ATM data packet generator configured to generate [for generating] data packets corresponding to an asynchronous transfer mode from the data stream[,]; and  
a transmission frame generator configured to generate [means (5) for generating] transmission frames corresponding to one of the SDH [or, respectively,]  
25 and PDH transmission system from the data packets corresponding to the asynchronous transfer mode.

3. (Amended) An apparatus [Apparatus for sending data in an SDH or, respectively, PDH transmission system] according to claim 19 [1 or 2], [characterized in that the means (6)] wherein the direct transmission frame generator [for the direct

generation of transmission frames generate] generates position data [(20)] with respect to [the] a position of [the] a first mini-cell for each corresponding individual transmission frame [in] and inserts the position data into each corresponding [the] individual transmission frame [in each transmission frame].

5           4.       (Amended) An apparatus [Apparatus for sending data in an SDH or, respectively, PDH transmission system] according to claim 3, [characterized in that the means (6) for the direct generation of transmission frames from the data stream] wherein the direct transmission frame generator arranges the position data [(20)] at the beginning of a respective individual transmission frame.

10           5.       (Amended) An apparatus [Apparatus for sending data in an SDH or, respectively, PDH transmission system] according to [one of the preceding claims] claim 19, [characterized in that] the [means (3)] multiplexer [for generating a single data stream is a means for the] is configured to perform statistical time-division multiplexing of the data incoming in the plurality of data channels [(1)].

15           6.       (Amended) A method [Method] for sending data in at least one of an SDH [or, respectively,] and a PDH transmission system, comprising the following steps of:

20               receiving and arranging data incoming in a plurality of data channels [in] into a plurality of mini-cells [of] having a flexible length, [whereby the received mini-cells are arranged following one another in the data stream,]; [and]

              generating a single data stream from the plurality of mini-cells, wherein the received plurality of mini-cells are arranged following one another in the data stream;

25               [direct generation of] directly generating individual transmission frames from the data stream; and

              [sending] transmitting the generated individual transmission frames via one of an SDH [or, respectively,] and PDH transmission system, [whereby] wherein the individual transmission frames contain a [plurality] number of mini-cells and

correspond to the frame structure of one of the SDH [or, respectively,] and PDH transmission system.

7. (Amended) The method [Method for sending data in an SDH or, respectively, PDH transmission system] according to claim 6, [characterized in that]  
5 further comprising the steps of:

generating position data with respect to [the] a position of [the] a first mini-cell [in the] for each corresponding individual transmission frame; and  
inserting the position data into each [are generated in the direct generation of transmission frames] corresponding individual transmission frame [to the SDH or, respectively, PDH transmission system].  
10

8. (Amended) The method [Method for sending data in an SDH or, respectively, PDH transmission system] according to claim 6, characterized in that the position data are arranged at the beginning of a respective transmission frame.  
15

9. (Amended) The method [Method for sending data in an SDH or, respectively, PDH transmission system] according to [one of the claims] claim 6 [through 8], [characterized in that] wherein the step of generating a single data stream from the plurality of mini-cells includes a statistical time-division multiplexing of the data incoming in the plurality of data channels [is implemented when generating the data stream].  
20

11. (Amended) The apparatus [Apparatus for receiving data in an SDH or, respectively, PDH transmission system] according to claim 20, further comprising:  
[characterized by a means (25)] an ATM data packet generator configured  
25 to [for recovering] recover data packets corresponding to an asynchronous transfer mode from the incoming transmission frames corresponding to one of the SDH [or, respectively,] and PDH transmission system[,]; and

a [means (26) for generating] a data stream generator configured to generate

the data stream from the data packets corresponding to the asynchronous transfer mode.

12. (Amended) The apparatus [Apparatus for receiving data in an SDH  
5 or, respectively, PDH transmission system] according to claim 20 [10 or 11],  
[characterized in that  
the means (27) for the reception and the direct generation of the data stream from the  
incoming transmission frames corresponding to the SDH or, respectively, PDH  
transmission system] wherein the direct data stream generator generates the data  
10 stream on the basis of position data [(20)] with respect to [the] a respective position  
of [the] a first mini-cell in the transmission frame that are contained in [every] each  
corresponding transmission frame.

13. (Amended) The apparatus [Apparatus for receiving data in an SDH  
15 or, respectively, PDH transmission system] according to claim 12, [characterized in  
that]  
the position data [(20)] are arranged at [the] a beginning of a respective transmission  
frame.

14. (Amended) The apparatus [Apparatus for receiving data in an SDH  
20 or, respectively, PDH transmission system] according to [one of the claims 10  
through 13] claim 20,  
[characterized in that the means (28) for distributing the data] wherein the de-  
multiplexer is configured to perform [is a means for] demultiplexing of the data  
25 stream according to the information contained in a respective header of each of the  
plurality of mini-cells [mini-cell header].

15. (Amended) A method [Method] for receiving data in at least one of  
an SDH [or, respectively,] and a PDH transmission system, comprising the following  
steps of:

receiving incoming transmission frames corresponding to a frame structure of one of the SDH and PDH transmission system;

[reception and direct generation of] directly generating a single data stream from the incoming transmission frames [corresponding to the frame structure of the SDH or, respectively, PDH transmission system,];

[distribution of] distributing data contained in a plurality of mini-cells [in] contained within the data stream onto respective data channels[,] ; and

[restoration of the] restoring data of [the] individual data channels from the plurality of mini-cells.

10

16. (Amended) The method [Method for receiving data in an SDH or, respectively, PDH transmission system] according to claim 15, [characterized in that] wherein the data stream is generated on the basis of position data with respect to the position of [the] a first mini-cell in the transmission frame that are contained in every transmission frame. with respect to [the] a respective position of [the] a first mini-cell in the transmission frame that are contained in [every] each corresponding transmission frame.

15

17. (Amended) The method [Method for receiving data in an SDH or, respectively, PDH transmission system] according to claim 16, [characterized in that] wherein the position data are arranged at the beginning of a respective transmission frame.

20

18. (Amended) The method [Method for receiving data in an SDH or, respectively, PDH transmission system] according to [one of the claims 15 through 17] claim 15, [characterized in that] wherein the step of distributing data includes [a] demultiplexing [of] the data stream corresponding to the information contained in [the] a respective header of the plurality of mini-cells [mini-cell header is implemented in the distribution of the data].

25

**Add the following new claims 19 and 20:**

19. An apparatus for sending data in at least one of an SDH and a PDH transmission system, comprising:

5 a data arrangement unit configured for receiving and arranging data incoming in a plurality of data channels into a plurality of mini-cells each having a flexible length;

a multiplexer configured to generate a single data stream from the plurality of mini-cells, wherein the received plurality of mini-cells are joined to one another within the single data stream; and

10 a direct transmission frame generator configured to generate individual transmission frames directly from the data stream and send the generated individual transmission frames via one of an SDH and a PDH transmission system, wherein the individual transmission frames contain a number of mini-cells and correspond to the frame structure of one of the SDH and PDH transmission system.

15 20. An apparatus for receiving data in at least one of an SDH and a PDH transmission system, comprising:

a direct data stream generator configured for receiving and directly generating a single data stream of a plurality of mini-cells from incoming transmission frames corresponding to the frame structure of one of the SDH and the PDH transmission system;

20 a de-multiplexer configured to distribute data contained in the plurality of mini-cells in the single data stream onto respective data channels; and

a data arrangement unit configured to restore data of individual data channels from the plurality of mini-cells.

25 **IN THE DRAWINGS:**

The applicant has filed concurrently herewith a Request for Drawing Approval in order to substitute German descriptions with English descriptions and also to label blocks within block diagrams in accordance with U.S. patent practice.



**IN THE ABSTRACT:**

Delete original page 12 and replace the Abstract with Replacement Page 12, which is provided on a separate sheet attached to the amendment.

**REMARKS**

5           The present amendment makes editorial changes to the specification, drawings, claims and Abstract in order to conform the United States Patent Practice. Additionally, the Applicants include herewith a copy of the new Abstract on a separate page. None of the changes in the claims is intended as a surrender of any of the subject matter within the scope of the original claim language since, as noted  
10       above, all of these changes have been made solely to bring the claims into conformity with the requirements of 35 U.S.C. §112, second paragraph.

Early consideration of the application is respectfully requested.

Respectfully submitted,

 (Reg. No. 28,982)

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**Abstract**

**Apparatus and Method for Sending and Receiving Data in an SDH or PDH Transmission System**

5           An apparatus and method for sending data in an SDH or PDH transmission system, including an arrangement unit for arranging data incoming in a number of data channels into mini-cells of flexible length and a multiplexer for generating a single data stream from the mini-cells. Additionally, a frame generator is included for the direct generation of transmission frames corresponding to the SDH or PDH transmission

10           system from the data stream. The method for sending data in an SDH or PDH transmission system includes arranging data incoming in a number of data channels in mini-cells of flexible length, generating a single data stream from the mini-cells, and directly generating transmission frames corresponding to the SDH or PDH transmission system from the data stream. The present invention further includes a

15           corresponding apparatus and method for receiving such data in an SDH or PDH transmission system. The present invention allows the utilization of existing AAL2 standards and AAL2 standards yet to be defined, while avoiding the loss of transmission bandwidth connected with the use of ATM cells.

5/PART

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533 Rec'd PCT/PTO 07 JUN 2000

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BOX PCT  
IN THE UNITED STATES ELECTED OFFICE  
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5                    REQUEST FOR APPROVAL OF DRAWING CHANGES

APPLICANT: Josef Singer  
ATTORNEY DOCKET NO.: P00,0638  
INTERNATIONAL APPLICATION NO: PCT/DE98/03456  
INTERNATIONAL FILING DATE: 23 November 1998  
10 INVENTION: "APPARATUS AND METHOD FOR SENDING AND  
RECEIVING DATA IN AN SDH OR PDH  
TRANSMISSION SYSTEM"

Assistant Commissioner for Patents  
Washington, D.C. 20231

15 Sir:

The Applicant respectfully requests approval of drawing changes made to  
Figures 1 through 5, marked in red and included herewith, in order to substitute  
English descriptions for the German descriptions and also to label blocks within the  
block diagrams in conformance with U.S. patent practice.

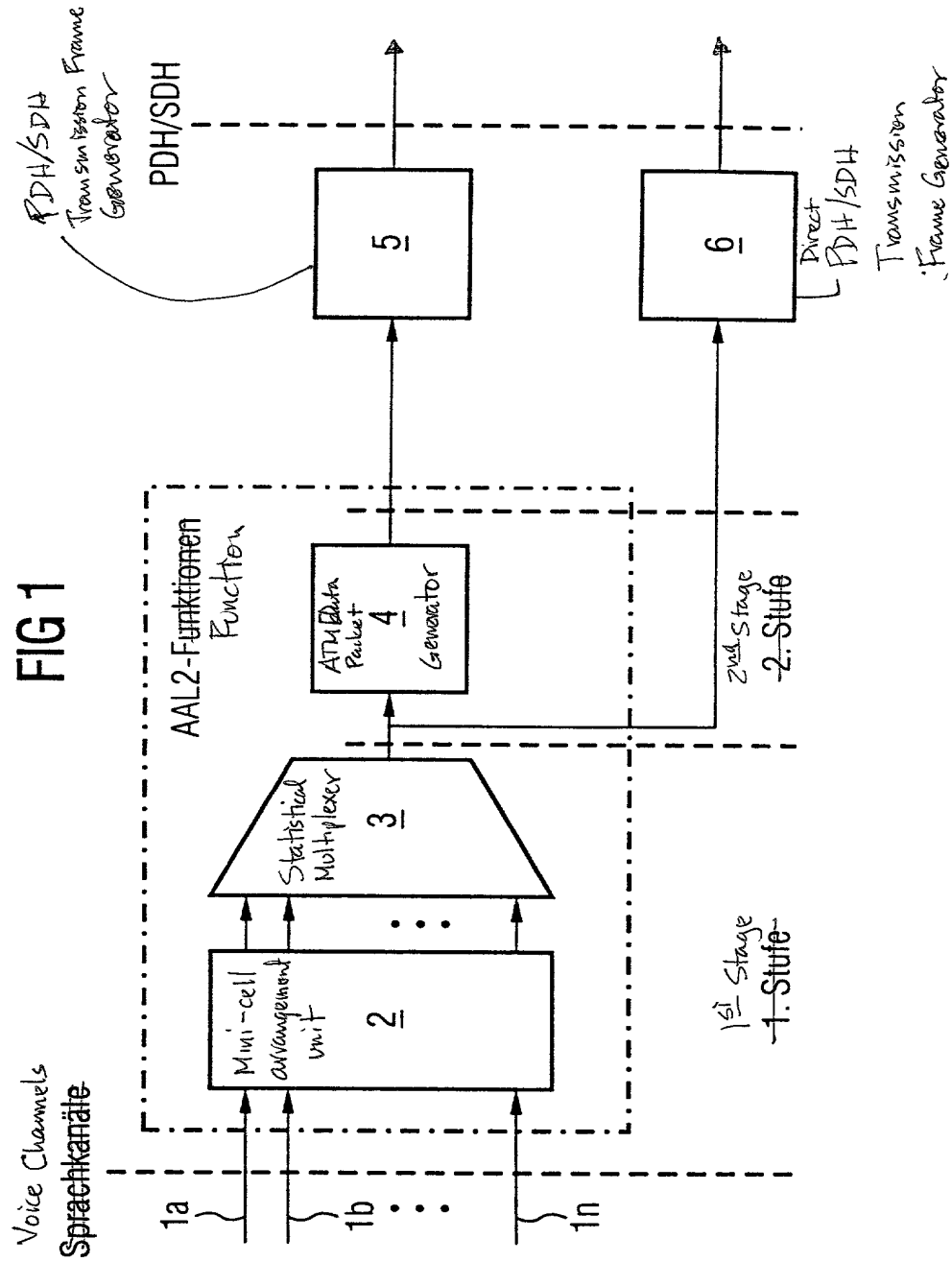
20 Respectfully submitted,



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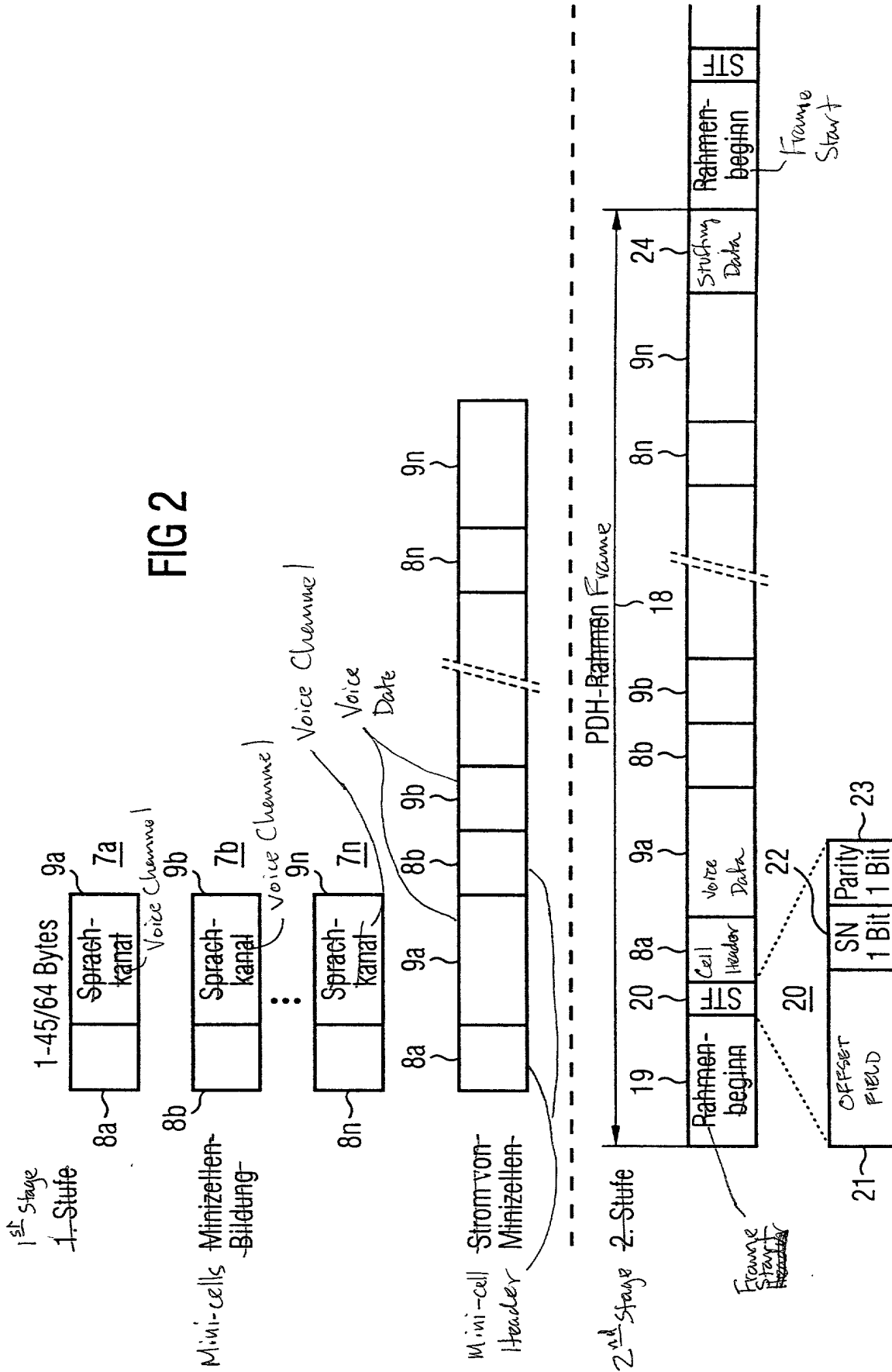
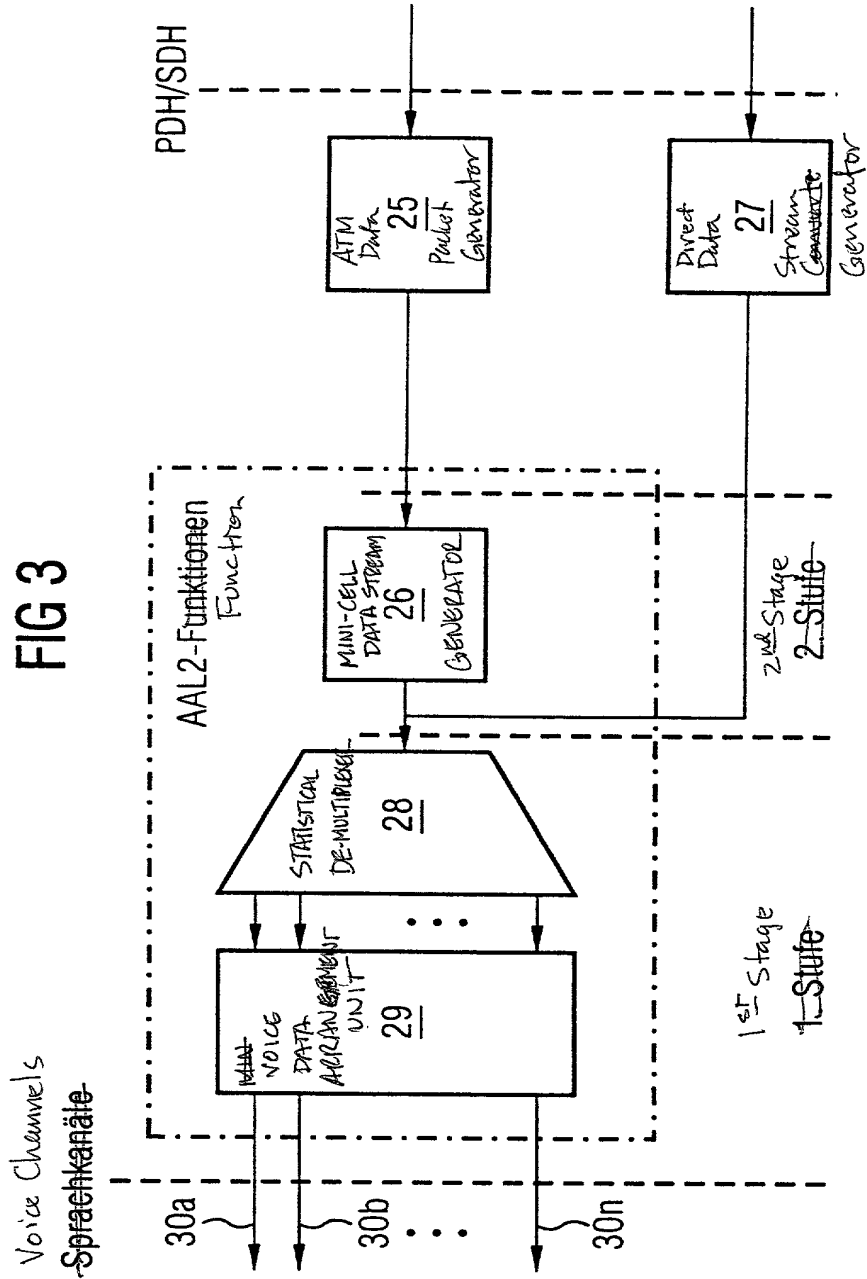
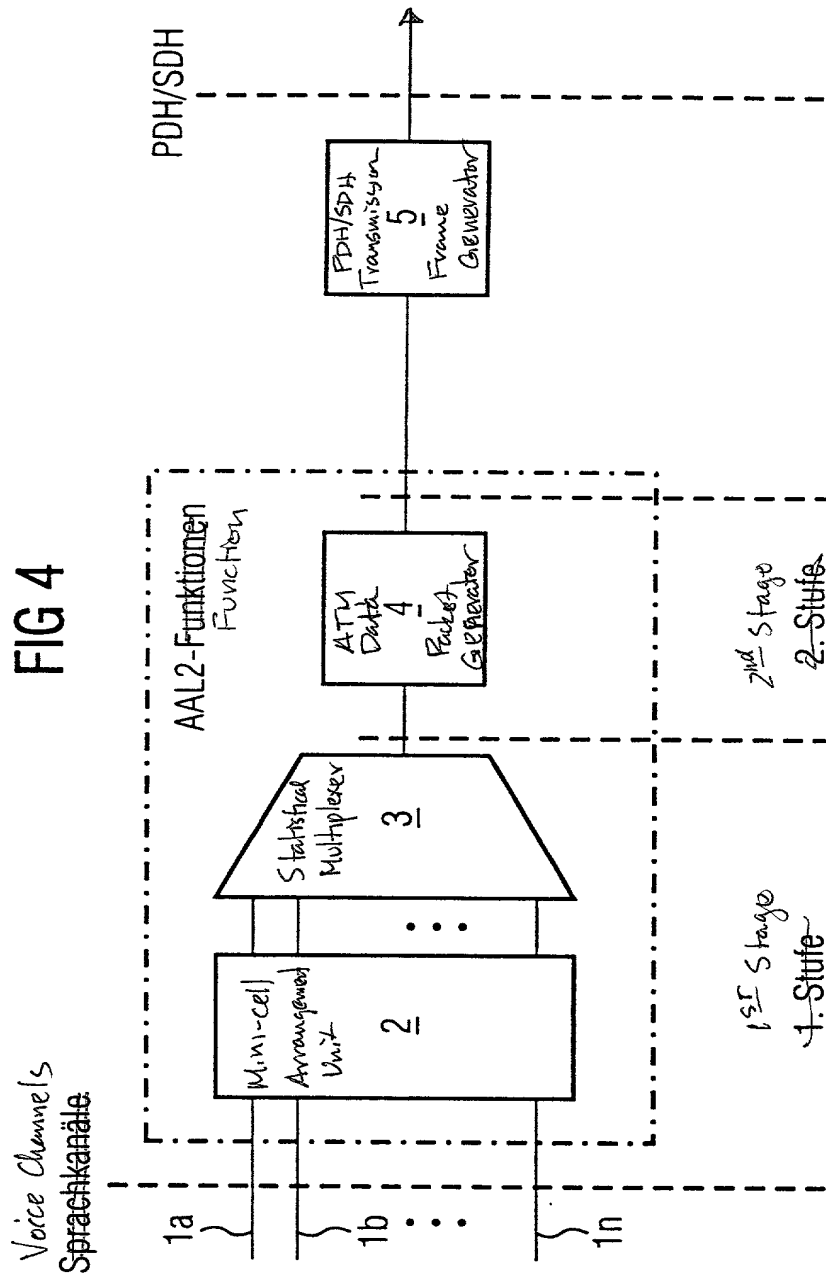


FIG 3



4/5







**APPARATUS FOR SENDING AND/OR RECEIVING DATA IN AN SDH OR,  
RESPECTIVELY, PDH TRANSMISSION SYSTEM**

The present invention is directed to an apparatus and a method for sending and/or receiving data such as, for example, compressed voice data in an SDH or,  
5 respectively, PDH transmission system.

In the transmission of data such as, for example, compressed voice data in SDH or, respectively, PDH transmission systems (SDH: synchronous digital hierarchy, PDH: plesiochronic digital hierarchy), data incoming on a plurality of different voice channels are combined in time-division multiplex and transmitted via a single channel  
10 such as, for example, a 64 kbit/s channel. An occupancy of the transmission path that is higher by the compression factor thus derives. Up to now, static multiplexing methods were employed for the combining of the channels such as, for example, in mobile radiotelephony. The pre-condition therefor is that all data incoming on the various voice channels are compressed to the same rate and that this rate does not  
15 change during operation. The data on the various data channels arrive regularly and are statically multiplexed, i.e. according to a specific, fixed strategy.

This has the disadvantage that a flexible transmission of different data rates is not possible for the individual voice channels. In static multiplexing, further, no reduction of the channel width is possible on the basis of speech pause suppression.

20 The ATM adaptation layer 2 (AAL 2) was defined in the standard ITU-T I.363.2 for the common transmission of a plurality of voice channels via ATM transmission networks (ATM: asynchronous transfer mode). The AAL2 specification describes a cell-oriented, two-stage method that is explained with reference to Figures 4 and 5. In the first stage, voice data supplied on a plurality of voice channels 1a, 1b,  
25 ... 1n are arranged in mini-cells 7 of flexible length in a means 2. Such mini-cells 7a, 7b, ... 7n are shown by way of example in Figure 5. Each mini-cell comprises a mini-cell header 8a, 8b, ... 8n at its beginning. The part of the mini-cells 7a, 7b, ... 7n following the respective mini-cell header contains the respective voice data 9a, 9b, ... 9n of the respective voice channel 1a, 1b, ... 1n.

## ART 34 AMDT

The mini-cells 7a, 7b, ... 7n are combined into a single data stream in a means 3, i.e. arranged following one another, as shown in Figure 5. The means 3 thus implements a static multiplexing of the mini-cells 7a, 7b, ... 7n in order to merge them to form a single data or, respectively, mini-cell stream.

5 In the second stage of the method described in the AAL2 specification, the data stream is subsequently packed in ATM data packets in a means 4. In other words, data packets that correspond to the asynchronous transfer mode are generated from the data stream in the means 4. An ATM header 10 as well as a start field 11 are thereby attached to each ATM data packet at its start. The start field 11 contains an  
10 offset field 12 as well as a sequence number 13 and a parity bit 14. The offset field 12 thereby contains information about the position of the respective mini-cells 7 in the ATM data packet. The following ATM data packet similarly contains an ATM header 15, a start field 16 and a mini-cell 7n. The space that is not required in this ATM data packet is filled with stuffing data 17.

15 In a means 5, the ATM data packets are converted into frame structures, i.e. into transmission frames, that correspond to the SDH or, respectively, PDH transmission system in which the data are to be transmitted. The transmission can thereby ensue, for example, via radio or via fixed lines. The transmitted SDH or, respectively, PDH transmission frames are received by a reception means that  
20 comprises the corresponding, inverse devices as the transmission means shown in Figure 4. The disadvantage of this method described in the AAL2 specification is that the voice data must first be inserted into ATM data packets before they can be transmitted in the SDH or, respectively, PDH transmission system, as a result whereof the available or, respectively, possible transmission bandwidth is reduced.

25 The document by Johnsson, M. et al., "SUPPORT FOR LOW BITRATE APPLICATIONS IN ATM NETWORKS", PROCEEDINGS OF IPIP WORKSHOP ON PERFORMANCE MODELLING AND EVALUATION OF ATM NETWORKS, 3 June 1996, pages 39/1 through 39/14, XP002045906, is concerned with the problem of low bitrate data transmission (for example, of voice data) via an ATM network.

30 The data are thereby likewise arranged in mini-cells. The mini-cells are in turn multiplexed into an ATM cell flow and sent via the ATM network.

2a

It is thus the object of the present invention is thus to offer an apparatus for sending data in an SDH or, respectively, PDH transmission system according to the preamble of the attached claim 1, a method for sending data in an SDH or,  
5 respectively, PDH transmission system according to the attached claim 6, an apparatus for receiving data in an SDH or, respectively, PDH transmission system according to the preamble of the attached claim 10 and a method for receiving data

according to the attached claim 15 that enable an increased transmission bandwidth in the transmission of data, for example compressed voice data.

This object is achieved by an apparatus and a method for sending data in an SDH or, respectively, PDH transmission system comprising the features of the attached claim 1 or, respectively, the features of the attached claim 6. The object is also achieved by an apparatus and a method for the reception of data in an SDH transmission system comprising the features of the attached claim 10 or, respectively, of the attached claim 15.

The apparatus and the method for sending data in an SDH or, respectively, PDH transmission system according to the present invention are particularly characterized in that the single data stream composed of the mini-cells is imaged into the frame structure of the SDH or, respectively, PDH transmission system in a direct way instead of or, respectively, as an alternative to the generation of data packets (ATM data packets) corresponding to the asynchronous transfer mode.

Given the apparatus or, respectively, given the method for receiving data in an SDH or, respectively, PDH transmission system according to the present invention, correspondingly, a data stream from which the mini-cells are in turn restored is generated in a direct way from the incoming transmission frame corresponding to the SDH or, respectively, PDH transmission system instead of or, respectively, as an alternative to the generation of ATM data packets.

The present invention thereby allows a significantly better usage of the transmission bandwidth in SDH or, respectively, PDH transmission systems, for example in the transmission of compressed voice data. Further, the present invention also allows the employment of different compression rates and compression methods within a multiplex bundle and, in particular, the use of a speech pause suppression wherein the transmission capacities that are not needed during speech pauses are filled up with the voice data of other channels, for example by statistical multiplexing.

Advantageous developments of the present invention are defined in the respective subclaims.

Given the apparatus or, respectively, the method for sending data according to the present invention, position information with respect to the position of the first mini-cell in the transmission frame are thereby advantageously generated for each transmission frame generated directly from the data stream. These position data  
5 are thereby advantageously arranged at the beginning of the respective SDH or, respectively, PDH transmission frame. It is also advantageous when a statistical time-division multiplexing of the data incoming in the plurality of data channels is implemented upon generation of the data stream in the apparatus or, respectively, the method for sending data. The statistical time-division multiplexing makes it possible  
10 to multiplex data incoming with different compression rates on the various voice channels and produce a single data stream. When the inventive apparatus for sending data should also be capable of transmitting data corresponding to the AAL2 specification, then a means for generating ATM data packets from the data stream and a means for generating transmission frames corresponding to the SDH or, respectively,  
15 PDH transmission system from the ATM data packets are to be provided. In this case, the inventive apparatus can transmit data corresponding to the AAL2 standard and corresponding to the present invention either in parallel fashion or alternatively. In particular, the present invention thereby also assures the compatibility of the apparatus or, respectively, of the method for sending or, respectively, receiving data with the  
20 AAL2 specification and/or with higher layers of standards yet to be defined. The present invention thus allows thus utilization of existing AAL2 standards and of AAL2 standards yet to be defined while avoiding the loss of transmission bandwidth connected with the use of ATM cells.

In the apparatus or, respectively, the method for receiving data according  
25 to the present invention, the data stream is advantageously generated on the basis of position data with respect to the position of the first mini-cell in the transmission frame that are contained in every SDH or, respectively, PDH transmission frame. Advantageously, the position data are thereby arranged at the beginning of the respective transmission frame. The distribution of the data contained in mini-cells in  
30 the data stream is implemented by demultiplexing the data stream according to the

information contained in the mini-cell header. So that the inventive apparatus for receiving data can also be employed in a transmission system that is based on the AAL2 specification, a means for recovering data packets corresponding to the ATM transmission mode from the SDH or, respectively, PDH transmission frames and a means for generating the data stream from the ATM data packets are also to be advantageously provided. The reception of the data according to the AAL2 specification can thereby ensue parallel or alternatively to the inventive data reception.

The present invention is also directed to a system for the transmission of data in an SDH or, respectively, PDH transmission system that comprises an apparatus for sending data and an apparatus for receiving data according to the present invention.

The present invention is explained in greater detail below on the basis of preferred exemplary embodiments with reference to the attached drawings, which show:

- 15 Figure 1 a block diagram of an apparatus for sending data in an SDH or, respectively, PDH transmission system according to the present invention;
- Figure 2 a schematic illustration of the inventively generated mini-cells and transmission frames when sending data;
- Figure 3 a block diagram of an apparatus for receiving data in an SDH or, respectively, PDH transmission system according to the present invention;
- 20 Figure 4 a block circuit diagram of an apparatus for sending data in an SDH or, respectively, PDH transmission system according to the AAL2 specification; and
- Figure 5 a schematic illustration of mini-cells and ATM cells generated according to the AAL2 specification.
- 25

Figure 1 shows a block circuit diagram of an exemplary embodiment of an apparatus for sending data in an SDH or, respectively, PDH transmission system according to the present invention. Voice data supplied in a plurality of different voice channels 1a, 1b, ... 1n are arranged in mini-cells 7a, 7b, ... 7n in a means 2. The mini-cells 7a, 7b, ... 7n have flexible lengths dependent on the respective voice dataset, as

schematically shown in Figure 2. The start of each mini-cell 7a, 7b, ... 7n is formed by a mini-cell header 8a, 8b, ... 8n that is followed by the respective voice data 9a, 9b, ... 9n of corresponding length.

The mini-cells 7a, 7b, ... 7n are combined into a single data stream in a statistical multiplexer 3, whereby the mini-cells that are formed are joined to one another dependent on their chronological arrival, as shown in Figure 2.

The transmission means shown in Figure 1 also comprises a transmission branch according to the AAL2 specification, wherein a means 4 generates ATM data packets or, respectively, data packets corresponding to the asynchronous transfer mode from the data stream, transmission frames that correspond to the SDH or, respectively, PDH transmission system being in turn formed therefrom in a means 5.

Independently thereof or as an alternative thereto, transmission frames that correspond to the SDH or, respectively, PDH transmission system are inventively generated from the data stream in a direct way in a means 6, dependent on the application. The direct generation of a PDH frame 18 from the data stream is shown by way of example in Figure 2. The means 6 thereby inserts a start field 20 that contains an offset field 21, a sequence number 22 and a parity bit 23 at the beginning of the PDH transmission frame 18, i.e. following the frame start 19. The offset field 21 contains data that identify the position of the first mini-cell 7a in the PDH frame 18. The start field 20 of the PDH frame 18 thereby essentially corresponds to the start field of the ATM data packets that is schematically shown in Figure 5. Stuffing data are provided at the end of the PDH frame 18 in order to fill up the space that is not needed.

Figure 3 shows a block circuit diagram of an exemplary embodiment of an apparatus for the reception of data in an SDH or, respectively, PDH transmission system according to the present invention. The reception means is likewise designed for alternative or parallel operation in a transmission system corresponding to the AAL2 specification, and its AAL2 reception branch comprises a means 25 at which transmission frames that correspond to the SDH or, respectively, PDH transmission system arrive. These data can be transmitted, for example, either via mobile

radiotelephone or via fixed lines. The means 25 generates data packets corresponding to the ATM or, respectively, the asynchronous transfer mode from the frames corresponding to the SDH or, respectively, PDH transmission system. A means 26 generates a data stream composed of mini-cells from the ATM cells. A demultiplexer  
5 28 distributes the mini-cells contained in the data stream onto the respective voice channels 30a, 30b ... 30n, and a means 29 generates to corresponding voice signals from the information in the mini-cells. The means 25, 26, 28 and 29 thus meet the AAL2 specification.

Inventively, a means 27 is provided wherein the incoming transmission  
10 frames that correspond to the SDH or, respectively, PDH transmission system are directly converted into a data stream. Dependent on the requirements, thus, the means 27 works independently of, alternatively to or parallel to the means 25 and 26. Similar to the data stream regenerated in the means 26, the data stream directly generated in the means 27 is supplied to the demultiplexer 28.

15 The present invention further comprises a transmission system that contains an apparatus for sending data according to the exemplary embodiment shown in Figure 1 as well as a means for receiving data according to the exemplary embodiment shown in Figure 3. The SDH or, respectively, PDH transmission system, in accord wherewith the data are transmitted, can thereby be a mobile radiotelephone system, a system with  
20 fixed lines, etc.



**Patent Claims**

1. Apparatus for sending data in an SDH or, respectively, PDH transmission system, comprising  
a means (2) for receiving and arranging data incoming in a plurality of data channels  
5 (1) in mini-cells of flexible length,  
a means (3) for generating a single data stream from the mini-cells, whereby the received mini-cells are joined to one another in the data stream,  
characterized by  
a means (6) for the direct generation of transmission frames from the data stream and  
10 for sending the generated transmission frames via an SDH or, respectively, PDH transmission system, whereby the individual transmission frames contain a plurality of mini-cells and correspond to the frame structure of the SDH or, respectively, PDH transmission system.

2. Apparatus for sending data in an SDH or, respectively, PDH  
15 transmission system according to claim 1,  
characterized by  
a means (4) for generating data packets corresponding to an asynchronous transfer mode from the data stream, and  
a means (5) for generating transmission frames corresponding to the SDH or,  
20 respectively, PDH transmission system from the data packets corresponding to the asynchronous transfer mode.

3. Apparatus for sending data in an SDH or, respectively, PDH transmission system according to claim 1 or 2,  
characterized in that  
25 the means (6) for the direct generation of transmission frames generate position data (20) with respect to the position of the first mini-cell in the transmission frame in each transmission frame.

4. Apparatus for sending data in an SDH or, respectively, PDH transmission system according to claim 3  
30 characterized in that

the means (6) for the direct generation of transmission frames from the data stream arranges the position data (20) at the beginning of a respective transmission frame.

5. Apparatus for sending data in an SDH or, respectively, PDH transmission system according to one of the preceding claims,

5 characterized in that

the means (3) for generating a single data stream is a means for the statistical time-division multiplexing of the data incoming in the plurality of data channels (1).

6. Method for sending data in an SDH or, respectively, PDH transmission system, comprising the following steps:

10 receiving and arranging data incoming in a plurality of data channels in mini-cells of flexible length, whereby the received mini-cells are arranged following one another in the data stream,

generating a single data stream from the mini-cells, and direct generation of transmission frames from the data stream and sending the generated transmission

15 frames via an SDH or, respectively, PDH transmission system, whereby the individual transmission frames contain a plurality of mini-cells and correspond to the frame structure of the SDH or, respectively, PDH transmission system.

7. Method for sending data in an SDH or, respectively, PDH transmission system according to claim 6,

20 characterized in that

position data with respect to the position of the first mini-cell in the transmission frame are generated in the direct generation of transmission frames corresponding to the SDH or, respectively, PDH transmission system.

8. Method for sending data in an SDH or, respectively, PDH transmission system according to claim 6,

25 characterized in that

the position data are arranged at the beginning of a respective transmission frame.

9. Method for sending data in an SDH or, respectively, PDH transmission system according to one of the claims 6 through 8,

30 characterized in that

a statistical time-division multiplexing of the data incoming in the plurality of data channels is implemented when generating the data stream.

10. Apparatus for receiving data in an SDH or, respectively, PDH transmission system, comprising

- 5 a means (27) for the reception and the direct generation of a single data stream of mini-cells from incoming transmission frames corresponding to the frame structure of the SDH or, respectively, PDH transmission system,  
a means (28) for the distribution of data contained in mini-cells in the data stream onto respective data channels, and  
10 a means (29) for the restoration of the data of the individual data channels (30) from the mini-cells.

11. Apparatus for receiving data in an SDH or, respectively, PDH transmission system,  
characterized by

- 15 a means (25) for recovering data packets corresponding to an asynchronous transfer mode from the incoming transmission frames corresponding to the SDH or, respectively, PDH transmission system, and  
a means (26) for generating the data stream from the data packets corresponding to the asynchronous transfer mode.

- 20 12. Apparatus for receiving data in an SDH or, respectively, PDH transmission system according to claim 10 or 11,  
characterized in that  
the means (27) for the reception and the direct generation of the data stream from the incoming transmission frames corresponding to the SDH or, respectively, PDH  
25 transmission system generates the data stream on the basis of position data (20) with respect to the position of the first mini-cell in the transmission frame that are contained in every transmission frame.

13. Apparatus for receiving data in an SDH or, respectively, PDH transmission system according to claim 12,  
30 characterized in that

the position data (20) are arranged at the beginning of a respective transmission frame.

14. Apparatus for receiving data in an SDH or, respectively, PDH transmission system according to one of the claims 10 through 13,

5 characterized in that

the means (28) for distributing the data is a means for demultiplexing the data stream according to the information contained in the mini-cell header.

15. Method for receiving data in an SDH or, respectively, PDH transmission system, comprising the following steps:

10 reception and direct generation of a single data stream from the incoming transmission frames corresponding to the frame structure of the SDH or, respectively, PDH transmission system,

distribution of data contained in mini-cells in the data stream onto respective data channels, and

15 restoration of the data of the individual data channels from the mini-cells.

16. Method for receiving data in an SDH or, respectively, PDH transmission system according to claim 15,

characterized in that

20 the data stream is generated on the basis of position data with respect to the position of the first mini-cell in the transmission frame that are contained in every transmission frame.

17. Method for receiving data in an SDH or, respectively, PDH transmission system according to claim 16,

characterized in that

25 the position data are arranged at the beginning of a respective transmission frame.

18. Method for receiving data in an SDH or, respectively, PDH transmission system according to one of the claims 15 through 17,

characterized in that

30 a demultiplexing of the data stream corresponding to the information contained in the mini-cell header is implemented in the distribution of the data.

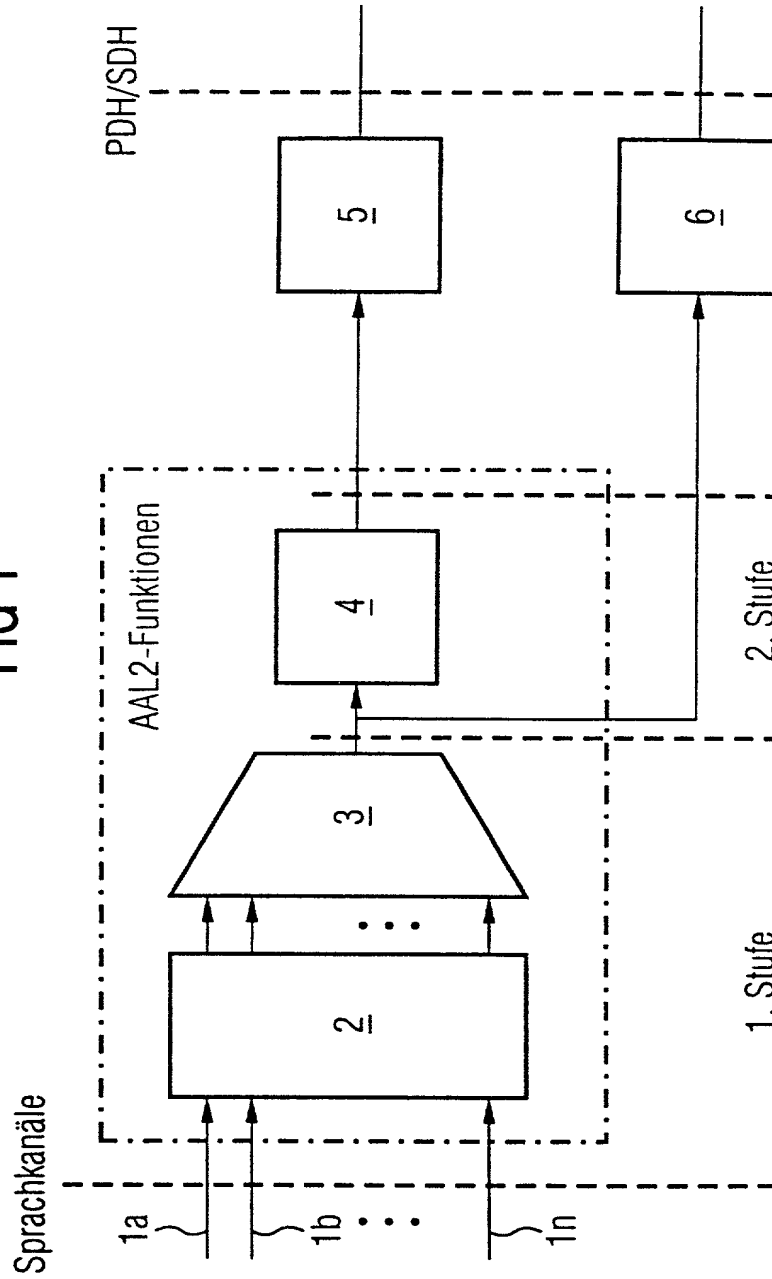
# Apparatus and Method for Sending and/or Receiving Data in an SDH or, Respectively, PDH Transmission System

## Abstract

The present invention is directed to an apparatus for sending data in an SDH or, respectively, PDH transmission system, comprising a means (2) for arranging data incoming in a plurality of data channels in mini-cells (7) of flexible length and a means (3) for generating a single data stream from the mini-cells (7), and is characterized by a means (6) for the direct generation of transmission frames corresponding to the SDH or, respectively, PDH transmission system from the data stream. The present invention also comprises a method for sending data in an SDH or, respectively, PDH transmission system, comprising the following steps: arranging data incoming in a plurality of data channels in mini-cells of flexible length, generating a single data stream from the mini-cells, and directly generating transmission frames corresponding to the SDH or, respectively, PDH transmission system from the data stream. The present invention further comprises a corresponding apparatus and a corresponding method for receiving such data in an SDH or, respectively, PDH transmission system. The present invention thus allows the utilization of existing AAL2 standards and AAL2 standards yet to be defined, while avoiding the loss of transmission bandwidth connected with the use of ATM cells.

Figure 1

FIG 1



**FIG 2**

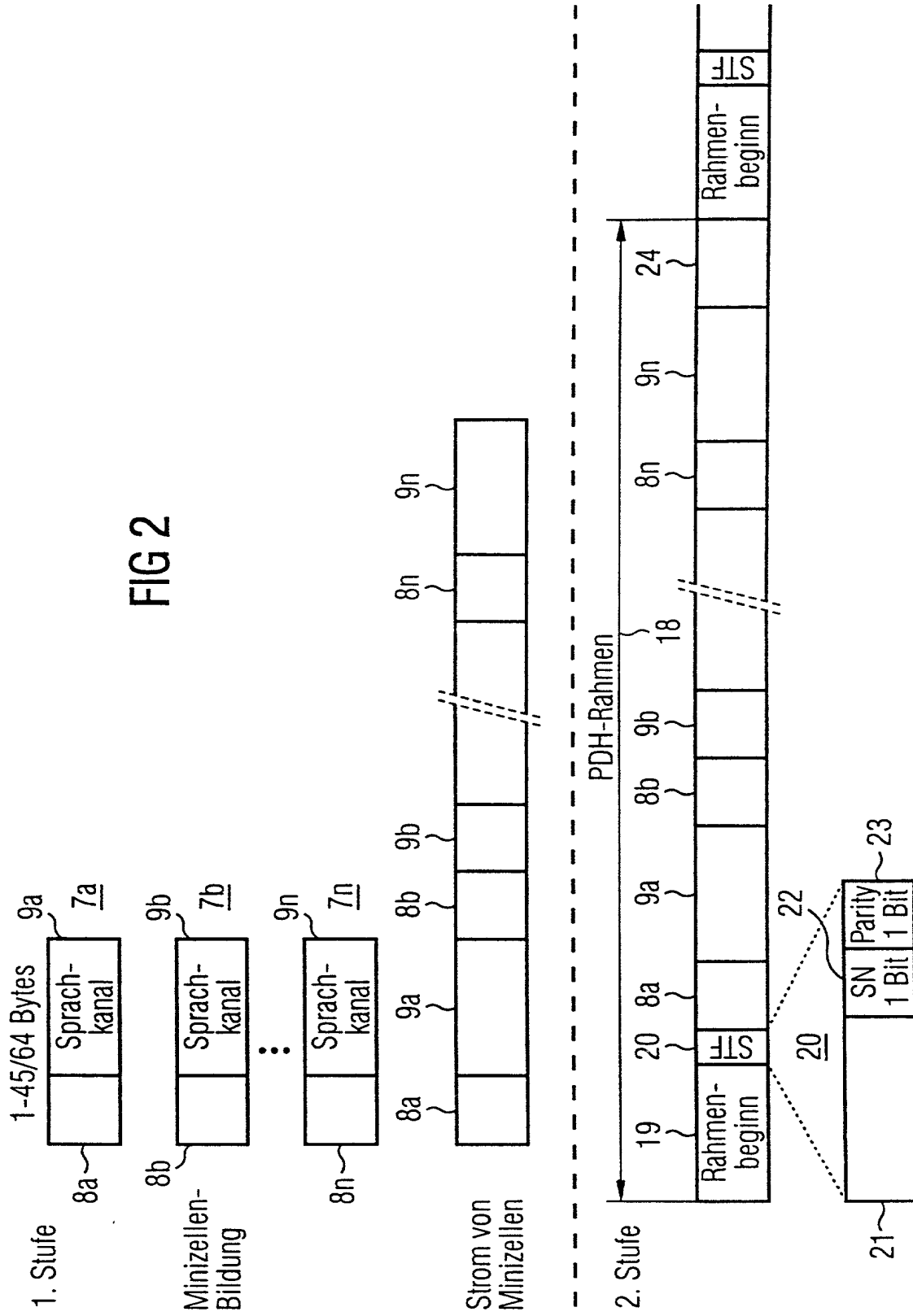


FIG 3

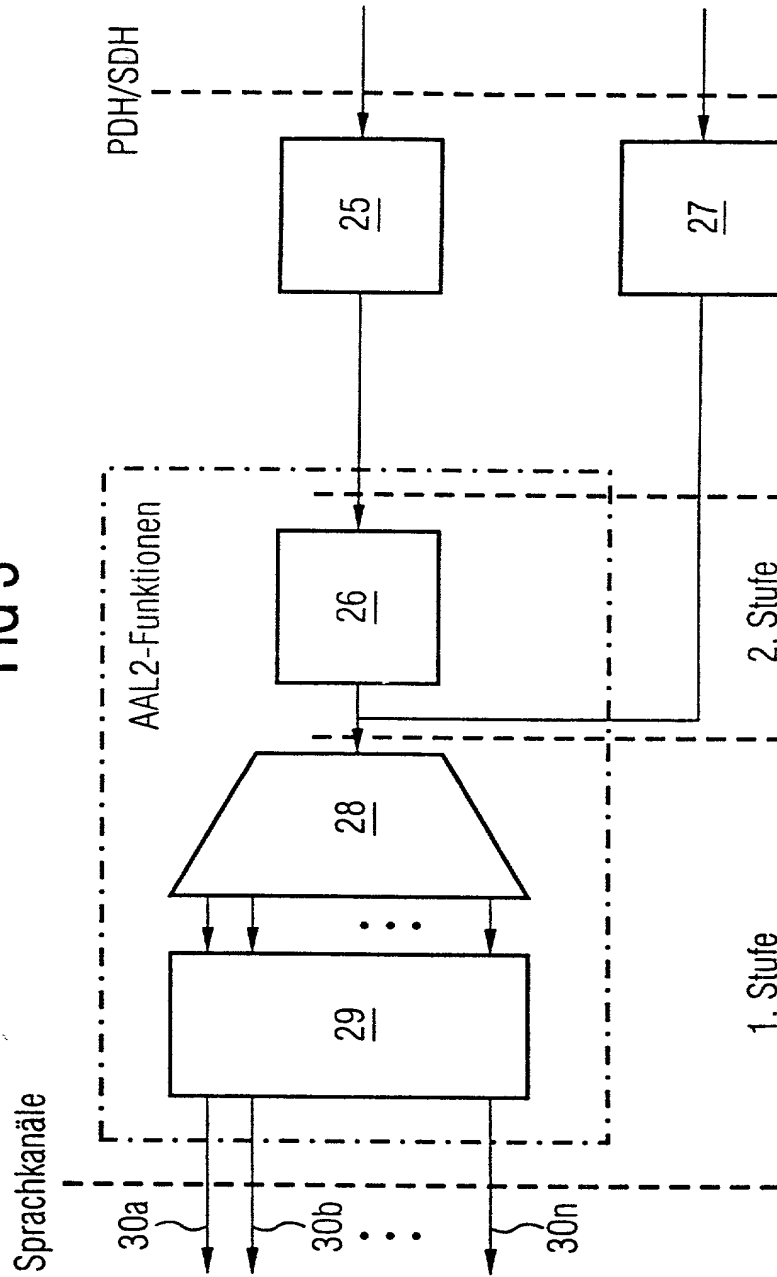




FIG 4

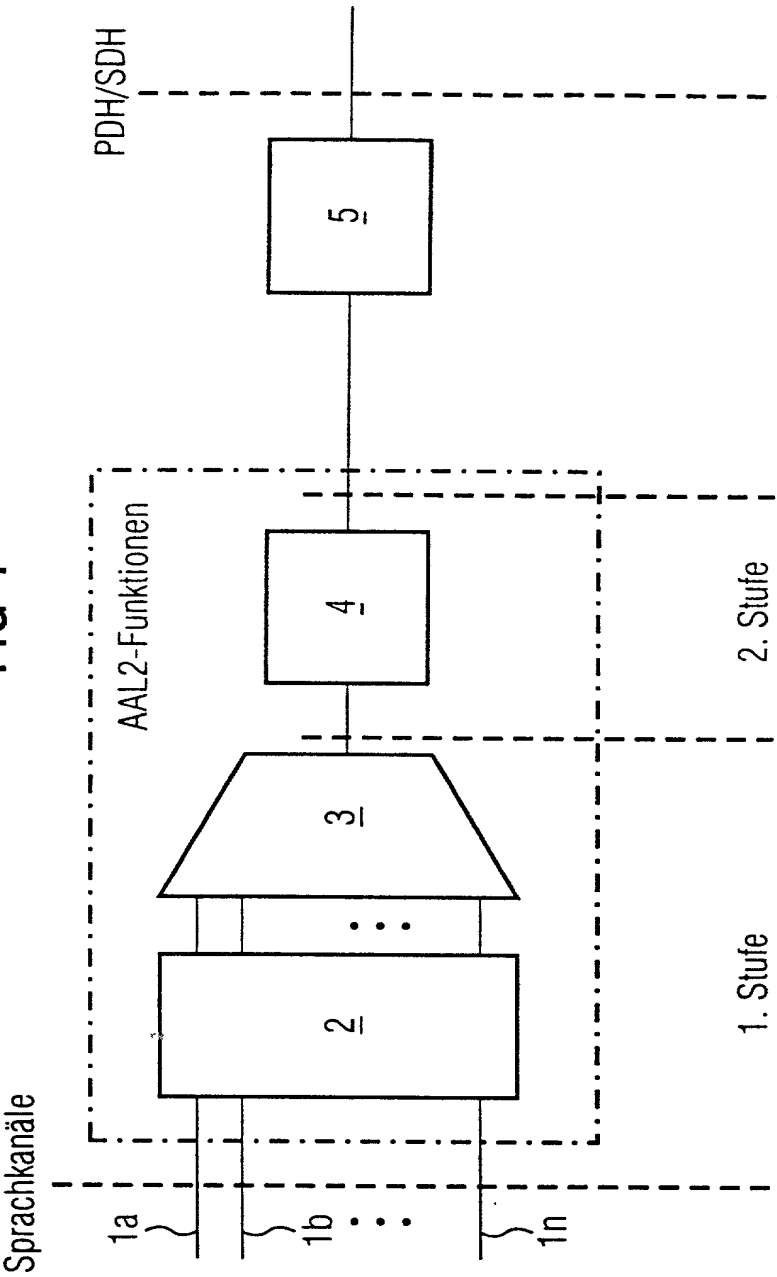
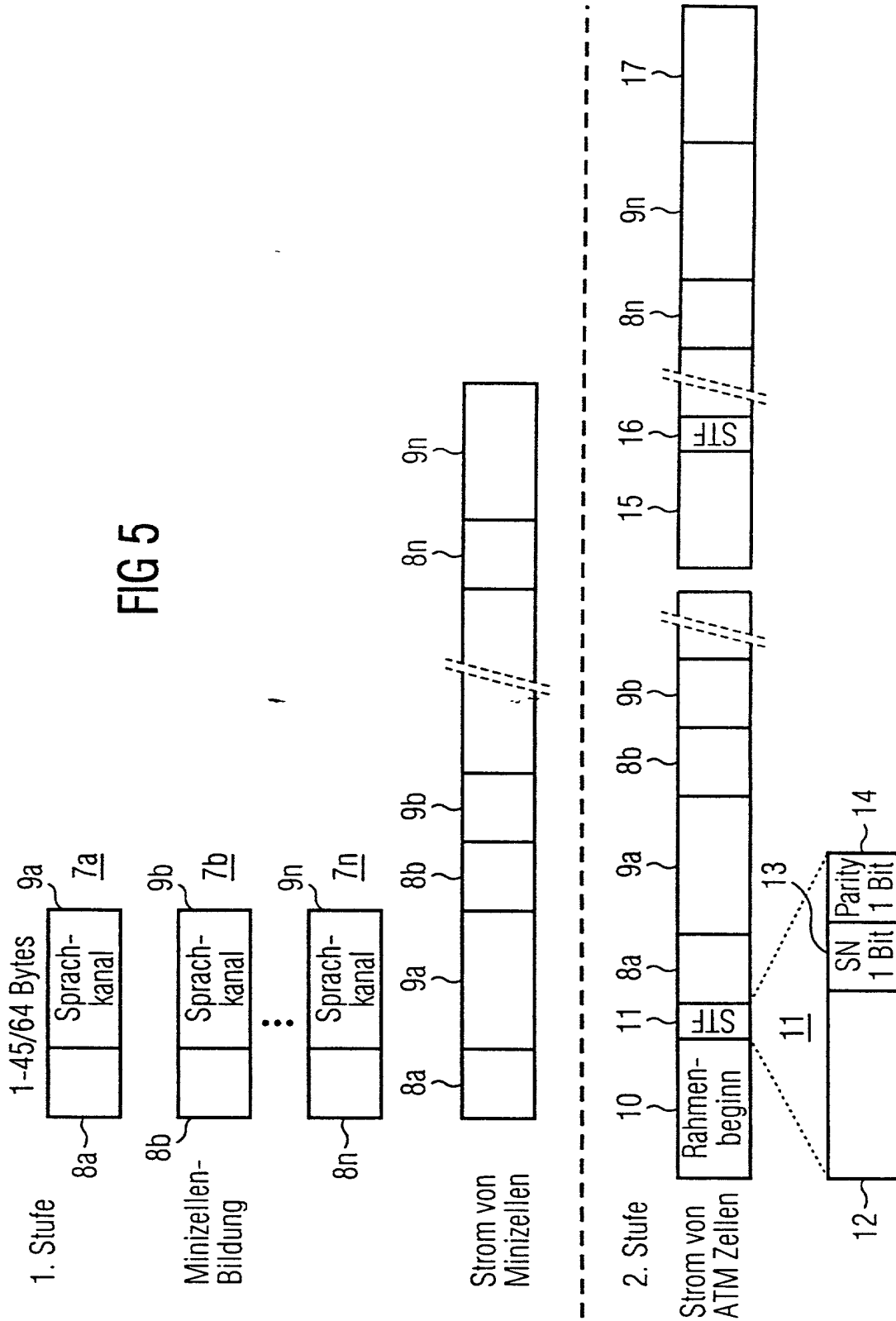


FIG 5



# Declaration and Power of Attorney For Patent Application

## *Erklärung Für Patentanmeldungen Mit Vollmacht*

### German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

As a below named inventor, I hereby declare that:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

My residence, post office address and citizenship are as stated below next to my name,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Vorrichtung zum Senden und/ oder  
Empfangen von Daten in einem SDH- bzw.  
PDH- Übertragungssystem

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

deren Beschreibung

the specification of which

(zutreffendes ankreuzen)

(check one)

☒ hier beigefügt ist.

☐ is attached hereto.

☐ am \_\_\_\_\_ als

☐ was filed on \_\_\_\_\_ as

PCT internationale Anmeldung

PCT international application

PCT Anwendungsnummer \_\_\_\_\_

PCT Application No. \_\_\_\_\_

eingereicht wurde und am \_\_\_\_\_

and was amended on \_\_\_\_\_

abgeändert wurde (falls tatsächlich abgeändert).

(if applicable)

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

## German Language Declaration

Prior foreign applications  
Priorität beansprucht

Priority Claimed

197 55 121.1    Germany    11. Dezember 1997  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☒    ☐  
Yes    No  
Ja    Nein

198 07 186.8    Germany    20. Februar 1998  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☒    ☐  
Yes    No  
Ja    Nein

\_\_\_\_\_  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☐    ☐  
Yes    No  
Ja    Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

\_\_\_\_\_  
(Application Serial No.)  
(Anmeldeseriennummer)

\_\_\_\_\_  
(Filing Date)  
(Anmeldedatum)

\_\_\_\_\_  
(Status)  
(patentiert, anhängig,  
aufgegeben)

\_\_\_\_\_  
(Status)  
(patented, pending,  
abandoned)

\_\_\_\_\_  
(Application Serial No.)  
(Anmeldeseriennummer)

\_\_\_\_\_  
(Filing Date)  
(Anmeldedatum)

\_\_\_\_\_  
(Status)  
(patentiert, anhängig,  
aufgeben)

\_\_\_\_\_  
(Status)  
(patented, pending,  
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

## German Language Declaration

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

And I hereby appoint

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(Supply similar information and signature for third and subsequent joint inventors).